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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/971,940	10/04/2001	Larry J. Miller	H0002349	4088

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EXAMINER
VO, LILIAN

ART UNIT	PAPER NUMBER
2127	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	09/971,940	MILLER, LARRY J.
Office Action Summary	Examiner	Art Unit
	Lilian Vo	2127

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _04 October 2001_.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1 - 35_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1 - 35_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
    1.☐ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _1/30/04_.
4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1 – 35 are pending.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

3.   Claims 1 – 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

Claim 1 recites the limitation "CPU control between and client thread", in page 13, line

1. This is considered unclear. The examiner believes that is a typographical error.

Appropriate clarification is required.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
> sale in this country, more than one year prior to the date of application for patent in the United States.

5.   Claims 1 – 3 and 18 - 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Ford

et al. ("CPU Inheritance Scheduling", hereinafter Ford), cited by applicant.

6.   Regarding **claim 1**, Ford discloses a method for transferring CPU budget and CPU

control between client thread and a server thread, comprising:

assigning a CPU budget to a client thread (page 1, right column, 2 – 3rd paragraph:

threads can temporarily donating their CPU time to selected threads while waiting on events on

interest. Page 4, left column, 3rd paragraph: A thread may have a real CPU assigned to it at any

given instant; a running thread may be preempted and its CPU reassigned to another thread);

executing the client thread at a scheduled time within a first period (page 1, right column,

2 – 3rd paragraph, page 4, left column, 3rd paragraph);

transferring, within said first period, CPU control and any unused CPU budget to the

server thread when the first thread stops executing (page 1, right column, 2 – 3rd paragraph:

threads can temporarily donating their CPU time to selected threads while waiting on events on

interest. Page 5, left column, 3rd paragraph: client thread donates its CPU time to the server

thread);

executing the second thread within said first period (page 1, right column, 2 – 3rd

paragraph, page 4, left column, 3rd paragraph, page 5, left column, 3rd paragraph); and

transferring, within said first period, CPU control and any unused CPU budget to said

client thread when the server thread stops executing (page 1, right column, 2nd paragraph: if an

event causes the scheduler thread to wake up, the running thread is preempted and the CPU is

given back to the scheduler immediately. Page 5, left column, and 3rd paragraph: client thread

donates its CPU time to the server thread for the duration of the request. Page 6, left column, 1st

paragraph, page 8, right column, 3rd paragraph – page 9, left column, 1st paragraph).

7.   Regarding **claim 2**, Ford discloses a method according to claim 1 further comprising alternately transferring CPU control and unused CPU budget between the client thread and the server thread within the period (page 1, right column, 2 – 3rd paragraph, page 4, left column, 3rd paragraph, page 5, left column, 3rd paragraph, page 6, left column, 1st paragraph, page 8, right column, 3rd paragraph – page 9, left column, 1st paragraph).

8.   Regarding **claim 3**, Ford discloses a method according to claim 1 further comprising terminating the execution of the client thread and the server thread when the CPU budget has expired (page 1, right column, 3rd paragraph: quantum expiration).

9.   Regarding **claim 18**, Ford discloses a method according to claim 1 wherein the CPU budget assigned to the client thread is sufficient to complete the task of the client/server pair (page 9, left column, last paragraph - right column, 1st paragraph: threads go back to sleep again after finishes all of its work before its real-time scheduling quantum is expired).

10.   Regarding **claim 19**, Ford discloses a method according to claim 1 further comprising assigning a CPU budget to the server thread (page 5, left column, 3rd paragraph: client thread donates its CPU time to the server thread).

11.   **Claims 20 - 21** are rejected on the same ground as stated in claims 1 - 2 above.

Claim Rejections - 35 USC § 103

12.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

13.   Claims 4 – 8, 10, 13 – 16, 22 – 26, 28 and 31 – 34 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Ford et al. ("CPU Inheritance Scheduling", hereinafter Ford), as applied

to claims 1 and 20 above, cited by applicant, in view of applicant's admitted prior art (hereinafter

AAPA).

14.   Regarding **claim 4**, Ford did not clearly disclose the step of transferring service requests

from the client to the server. Instead, Ford discloses that when a thread makes an RPC to a server

thread, the client thread may donate its CPU time to the server for the duration of the request

(page 5, left column, 3rd paragraph). This obviates that client thread is executing to

transfer/forward the request to the server for processing. Furthermore, the step of executing with

transferring the service requests from the client to the server is considered obvious and well

knows for the client-server system, which also admitted by applicant's admitted prior art

(specification page 2, line 21 – page 3, line 2). Therefore, it would have been obvious for one of

an ordinary skill in the art, at the time of the invention was made, to incorporate the feature of

transferring the request to the server as disclosed in applicant's admitted prior with Ford's

system, in which the client in client-server environment transfers the service requests to the

server to obtain a desirable result.

15.   Regarding **claim 5**, as modified Ford discloses the step of transferring results of the

service requests from the server to the client (AAPA, specification page 2, line 21 – page 3, line

2).

16.   Regarding **claim 6**, as modified Ford discloses the client thread places service request in

a client-to-server queue when said client thread is executing and wherein said server thread

retrieves and processes the service request when said server thread is executing (AAPA,

specification page 2, line 25 – page 3, line 2).

17.   Regarding **claim 7**, as modified Ford did not clearly discloses the server thread places the

results of the service request in server-to-client queue when the server thread is executing and

wherein the client thread retrieves the results when said client thread is executing. Instead,

AAPA discloses of an input queue to place input/request to be serviced. Moreover, the server to

client queue is considered well known in the client-server environment, in which an output queue

is used to place the result/output after finishing process to be sent back to/be retrieved by the

client. Therefore, it would be obvious for one of an ordinary skill in the art, at the time the

invention was made to implement modified Ford with an output queue to place the result so that

it can be retrieved by the client thread to obtain the desirable result.

18.   Regarding **claim 8**, as modified Ford discloses the step of transferring occurs when the

client thread has completed send service request to the client-to-server queue (page 1, right

column, 2 – 3rd paragraph: threads can temporarily donating their CPU time to selected threads

while waiting on events on interest. Page 5, left column, 3rd paragraph: client thread donates its CPU time to the server thread).

19.   Regarding **claim 10**, as modified Ford discloses the step of transferring occurs when a service request must be processed immediately (Ford, page 4, left column, 3rd – 4th paragraph: a running thread may be preempted and its CPU reassigned to another thread at any time).

20.   Regarding **claim 13**, as modified Ford discloses the step of transferring occurs when the server thread is responding to a priority service request from the said client thread (Ford, page 1, right column, 3rd paragraph: if a different event causes the scheduler thread to wake up, the running thread is preempted and the CPU is given back to the scheduler immediately).

21.   Regarding **claim 14**, as modified Ford discloses the first step of transferring occurs upon the occurrence of a synchronization object (Ford, page 1, right column, 2nd paragraph: threads can temporarily donate their CPU time to selected threads while waiting on events of interest).

22.   Regarding **claim 15**, as modified Ford discloses the second step of transferring occurs upon the occurrence of a synchronization object (Ford, page 1, right column, 3rd paragraph: if a different event causes the scheduler thread to wake up, the running thread is preempted and the CPU is given back to the scheduler immediately).

23.   Regarding **claim 16**, as modified Ford discloses the synchronization object is an event (Ford, page 1, right column, 3rd paragraph: if a different event causes the scheduler thread to

wake up, the running thread is preempted and the CPU is given back to the scheduler

immediately).

24.   **Claims 22 – 26, 28 and 31 – 34** are rejected on the same ground as stated in claims 4 – 8,

10 and 13 – 16 above.

25.   Claims 9, 11, 12, 27, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Ford et al. ("CPU Inheritance Scheduling", hereinafter Ford), as applied to claims 1 and 20

above, cited by applicant, in view of applicant's admitted prior art (hereinafter AAPA) and

further in view of Ryan et al. (US Pat Application Publication 2002/0184381, hereinafter Ryan).

26.   Regarding **claim 9**, as modified Ford did not clearly disclose the step of transferring

occurs when the client-to-server queue is full. Nevertheless, Ryan discloses a network processor

for switching data between an input and output that has an input queue and an output in which if

the input queue has an occupancy value exceeding the threshold occupancy value, the data is

redirected to another input queue, in other words, an appropriate action is taken (abstract and

page 57, claim 12). It would have been obvious for one of an ordinary skill in the art, at the time

the invention was made, to incorporate the feature as taught in Ryan to modified Ford so that the

appropriate action can be taken when the input queue is full.

27.   Regarding **claim 11**, as modified Ford did not clearly disclose the step of transferring

occurs when the server-to-client queue is full. Nevertheless, Ryan discloses a network processor

for switching data between an input and output that has an input queue and an output in which

the processing element will not overwrite words in an output queue that still need to be read by the queue manager (page 7, paragraph 89). It would have been obvious for one of an ordinary skill in the art, at the time the invention was made, to incorporate the feature as taught in Ryan to modified Ford so that the appropriate action can be taken when the output queue is full so that data in the output are not being overwrite.

28.   Regarding **claim 12**, as modified Ford did not clearly disclose the step of transferring occurs when the server thread empties the server-to-client queue. Nevertheless, Ryan discloses a network processor for switching data between an input and output that has an input queue and an output in which the processing element will not overwrite words in an output queue that still need to be read by the queue manager (page 7, paragraph 89). It would have been obvious for one of an ordinary skill in the art, at the time the invention was made, to incorporate the feature as taught in Ryan to modified Ford so that the appropriate action can be taken to empty the output queue so that addition data can be written to the output queue.

29.   **Claims 27, 29 and 30** are rejected on the same ground as stated in claims 9, 11 and 12 above.

30.   Claims 17 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ford et al. ("CPU Inheritance Scheduling", hereinafter Ford), as applied to claims 1 and 20 above, cited by applicant, in view of applicant's admitted prior art (hereinafter AAPA) and further in view of Chan (US 6,466,898).

31.   Regarding **claim 17**, as modified Ford did not clearly disclose that synchronization object

is a semaphore. Nevertheless, Chan discloses the synchronization object is a semaphore (col. 18,

line 64 – col. 19, line 5, line 37 – 46). It would have been obvious for one of an ordinary skill in

the art, at the time the invention was made, to incorporate this feature from Chan to modified

Ford so that threads state can be updated accordingly.

32.   **Claim 35** is rejected on the same ground as stated in claim 17 above.

Conclusion

33.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure: Biliris et al. (US 6,041,354) disclosed a method that provided supports continuous

media for conventional networked workstations and PC's with slack filling.

34.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Lilian Vo whose telephone number is 571-272-3774. The

examiner can normally be reached on Monday - Thursday, 7:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lilian Vo
Examiner
Art Unit 2127

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December 28, 2004

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